## عنوان مقاله:

Stability Analysis for Continuous T-S Fuzzy Models Having Uncertainties: A Systematic Approach

## محل انتشار:

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## خلاصه مقاله:

Stability analysis of continuous-time unforced T-S fuzzy systems is considered. Based on the pairwise commutative feature that usually occurs among the state matrices in switching systems, here we reformularize an existing discrete-time stability analysis approach to its continuous-time domain version. Using a common quadratic Lyapunov function, we first present a systematic approach for the asymptotic stability of such systems in case where the state matrices of sub-systems follow pairwise commutative feature. We then show that the method is not only limited to systems following such feature but rather can be applied to a wider category. Finally, we investigate the maximum permissible uncertainty bound for holding the stability when the uncertainties in the system belong to convex sets

## کلمات کلیدی:

Stability, Takagi-Sugeno (T-S) fuzzy systems, Pairwise commutative, Maximum uncertainty bound